

In Vegetation Maintenance

TALE OF TWO CITIES' AIRPORTS



VISUALIZE THE TASK of mowing, spraying and fertilizing the grid iron turf with the Super Bowl in progress.

Now, substitute screaming jet-planes for the yelling linemen. Set the crowd in motion, scurrying from one section of the stadium to another.

Perhaps you can now conceive of the arena in which the grounds crews work at Chicago's O'Hare Field and Houston's Intercontinental Airport.

The coaches are Ray Humbar at O'Hare and L. Pat Collins at Houston. Easily, they can match grid coaches, manpower and equipment frustrations and "front office" idiosyncrasies. There is one glaring difference in the game outcome. Humbar and Collins have no choice but to win — and continue to win. Otherwise, lots of people could get hurt, or killed.

That's why, says Humbar, "our primary interest is safety, and at Chicago we have one of the biggest and safest airports in the world."

Both men are responsible for more than vegetation. They must see that runways are kept clean and are well marked and to varying degrees they are responsible for handling the trash from the maze of airport buildings and grounds. But the care and

control of vegetation can be more critical in providing a safe place for planes to take off and land. Aesthetic considerations, while secondary, can become extremely sensitive.

12 Tips on Management

Humbar and Collins probably have faced all — and solved most — of the problems airport grounds managers can experience. From discussions of their year-round operations, this advice emerges:

- Pay particular attention to employee morale. Hiring a trained man is practically impossible, therefore it is essential that once you've trained a new employee you make every effort to keep him — and keep him happy.

"I consider my staff as one big family," said Collins. And employees respond: "He's the kind of man you want to work for. You just don't find a problem he can't help you with."

- Use inclement weather to add depth and breadth to employee training. Formalize training even to the extent of using such aids as lectures, films and examinations.

- Provide the employee with the opportunity to advance within grade, recognizing him for his achievement with more pay. Have certain employees groomed for supervisory roles.

- Set up a clearly understood chain of command. Even with superior radio communications, times will occur when staff members must get work moving or make decisions for the superintendent.

- Determine which turf areas are sensitive, aesthetically or otherwise, from the viewpoint of the public (or the boss), and plan grooming accordingly.

- Anticipate problems, and plan far ahead. Order materials from three to six weeks before expected use date. Budget a year ahead, and carefully justify new expenditures.

- Get to know those persons who handle and approve your requests for materials. In an emergency, the sluggish administrative gears may be greased with a phone call. When your back is really to the wall, the door may be opened to hand-carry the request.

- Try a variety of products. They may not work equally well for your particular problem. "I've used herbicides where the results were so disappointing I could have done a better job spraying diesel oil," said Humbar.

"Every herbicide is best suited for something," added Collins. "Know what that use is."

- Experiment to determine which materials work best for you.





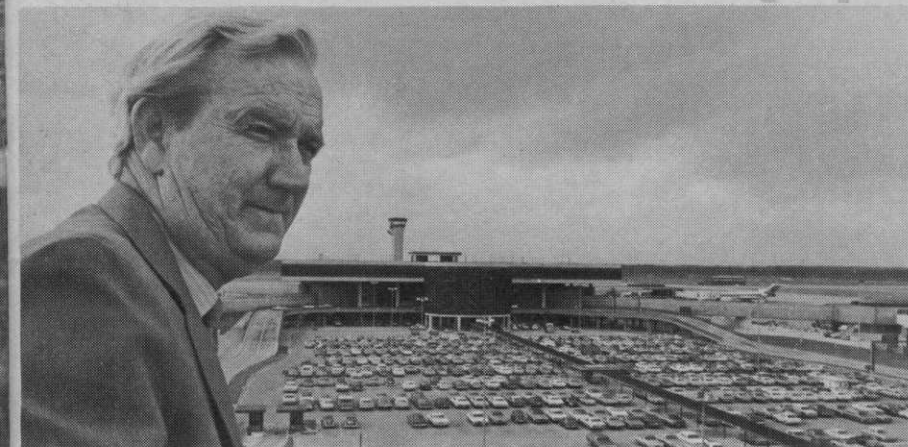
Airfield and grounds superintendent Ray Humbard at Chicago.

● O'HARE FIELD

Humbard is putting out a five-acre plot this year combining weed killer with grass growth retardant. Collins hopes to get some crownvetch established along drainage ditchbanks, believing the legume will cut maintenance costs up to 70% once it is established.

● Though products and materials are usually purchased by bid, careful attention to writing specifications can get you the brand of equip-

● HOUSTON
INTERCONTINENTAL



ment or material you want.

● Keep in touch with related city vegetation care programs, watching for the opportunity to do a favor or get one done. Humbard is getting landfill material from the city forestry department that's tickled pink to find a disposal site for trees killed by Dutch Elm Disease.

Collins has an active "farming program" on portions of 1,750 acres of airfield grounds. He plants coastal bermudagrass and prairie hay, which is cut, baled, and sold to the city zoo.

● Watch for the opportunity to take advantage of federal assistance programs. Collins hopes to get 50 men this summer through the federal Manpower Development Training program. Though the men, under 21, aren't trained to handle power equipment, Collins will provide rakes and axes and use them to clear brush, or for similar jobs that can be done with hand labor. The federal government has indicated it may share the wage costs.

Airports Alike and Different

Houston and O'Hare airports exhibit both striking similarities and contrasts in description and operations. Both airports cover in excess of 7,000 acres. O'Hare, long established but constantly expanding, has

450 acres in turf. Houston, just opened in 1969, has a much bigger percentage of land undeveloped. Collins is pursuing a goal of maintaining 619 acres to "golf course perfection." An additional 575 acres gets reduced fertilizer and herbicide treatment; another 1,760 acres is maintained only at widths of 200 to 300 feet from roadway shoulders.

Geographic location dictates difference in vegetation, equipment, manpower and materials. O'Hare is a "bluegrass" airport; Houston is a bermudagrass terminal. O'Hare has six to eight men who mow the entire acreage three or four times a year, then stand ready to remove snow from runways the rest of the year. Houston, with a total of 42 employees, mows year around except for a few weeks in January and February.

O'Hare spends about \$20,000 for herbicides and \$20,000 for turf equipment and supplies; Houston's annual budget is about \$50,000 for fertilizers and \$35,000 for herbicides. Principal differences in expenditures are climate and growing season and that O'Hare's program is one of maintaining and rebuilding, whereas Houston's is building turf on areas that were once "neck high" in weeds.

Field drainage, public use areas, weed control around landing and takeoff installations, and perimeter fence weed control are common headaches.

Both airports are turning to herbicides to keep drainage ditches unplugged from excessive weed growth. Humbard said the network of ditches, costing millions to build, can deteriorate to the point of needing redredging. Such a task might cost close to \$90,000, when the ditches, he estimates, could be effectively cleaned with herbicides at less than \$5,000. A program begun in 1969 called for using Dow General Weed Killer and Tordon 10K pellets.

Houston has 18 miles of drainage ditches, some situated between the 105-acre, closely manicured boulevard approach to the airport and others through rugged terrain of less developed sections.

For herbicide application, "we control drift with Foamwet," said Collins. "We found that with foam we know we're getting coverage because we can see it. We never use over 60 psi and we have a nozzle for each type of application. It's extremely important to have the head shaped properly for the ditch bank to get uniform coverage."

For Johnsongrass and Dallisgrass control in turf, Collins uses Foamicide 1300, containing MSMA. Rada-



Airport turf care requires nearly every size, style and type of mowing vehicle, from the 25-ft. rotaries at Chicago (page 18), the 7-gang reels (above) and big flails (lower right) at Houston to the small riding mowers (upper right) and push mowers (lower left) at Chicago.

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needed along edges of runways to minimize the dust and debris kicked up by increasingly powerful jet planes. The 747 has necessitated widening runways at O'Hare from 150 to 200 feet, Humbard said. Under full power, he explained, the 747 engines' backblast is so tremendous it shears off the metal runway lights.

Headaches — Public and Construction

"Our greatest problem is the peak construction activity we operate under," said Humbard. "We no more than get something planted before we have to dig it up again. Often this means we must move trees at the wrong time of the year."

Construction, he added, has required the contracting for 40,000 yards of sod for each of the past three years.

"The public itself is a big problem," continued Humbard, because of its misuse of turf areas. "I would guess we pick up 400 tons of cigarette butts a year. Our hang-up in some places is where turf won't grow because of the nicotine content of the soil. We're considering trying artificial turf."

Collins, estimated the cost of picking up trash at Houston at \$180 per day.

Building Houston From Ground Up

Collins, a retired air force pilot, former golf course and landscape contractor, and a college-trained business administrator and agronomist, faced a monumental task when Houston Intercontinental was begun "out in the sticks" 22 miles from downtown. However, previous experience in such a large undertaking helped.

At one time he handled much of the landscaping for the NASA complex, employing 67 men and working under contracts totaling as high as \$2.3 million. He had been with the Houston parks department, in charge of the botanical garden, before becoming airfield and grounds



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For More Details Circle (133) on Reply Card



Houston uses a road grader to improve drainage ditches.

pon is used on cattails. For soil sterilization around lights, markers, fences and buildings, Foamicide 1000 is used, containing bromacil, diuron and MSMA.

But the storage area also includes DSMA, Pramitol, Karmex, Ansul 529, Monobor-Chlorate and TH De-Pester.

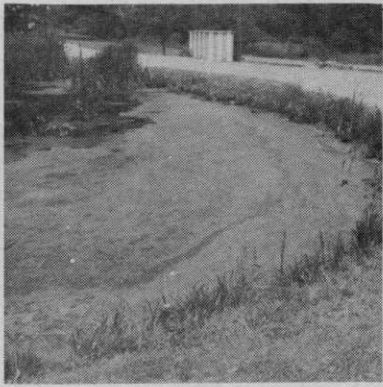
Vegetation for Safety's Sake

Aside from turf aesthetics, weed control objectives are dictated by safety standards. High weeds can obstruct visibility of landing lights, interfere with radar, obstruct drainage, create fire hazards, and increase mowing frequency and cost.

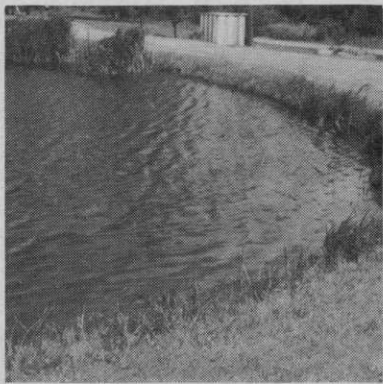
Solid turf coverage is particularly

Houston and Chicago airports are swept down fore and aft, concrete and turf. The sweeper below is working the boulevard approaches to Houston Intercontinental.





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Pat Collins talks shop with his two supervisors, Lee Hightower, left, and Harry Clifford, center.

superintendent for H.I.A. four years ago.

Collins first tackled those neck high weeds by burning. That was five years ago. A soil test indicated an 8.4 pH.

A program of encouraging what common bermudagrass there was with 13-13-13 "didn't do so well." The successful program that followed to take care of weeds and at the same time establish turf might best be described as the "scorched earth fertilizer policy."

"We applied 1,500 lbs. per acre of fertilizer in a 90-day period," Collins said. "We got tremendous weed control. Then a three-inch rain came at the right time and the grass almost greened up over the weekend."

He began (1969) with 750 lbs/a in March and 500 lbs/a in May of urea 45 and 38 with formaldehyde. In July, limestone with an 8-2-4 base was added even though the soil test didn't show a need for it.

In March of 1970, another 500 lbs/a of 45% urea was applied.

This spring, the program changes a little. The rate is the same. In March, 15-5-10, including 16% sulfur, .8% iron and .5% zinc, went down. Ammonium sulfate, 21-0-0, will be applied in May. Boulevards will again get the 8-2-4 limestone.

Collins is hoping to replace com-

mon with 328 hybrid bermudagrass along the slopes. An additional 575 acres gets a once-a-year fall application of 12-24-12.

It is particularly along the 105 acres of boulevard approaches to the airport where Collins wants that golf course perfection. It is mowed at 1/2-inch with flails and reels until July (a new 10-blade reel can now mow to 1/8-inch). From July to about the third week in September, the height is raised to one inch. Mowing is weekly, with thatching and sweeping done every fifth cut.

For insect control, Collins applies chemical with fertilizer to control fire ants. Diazinon is used on the pine bark beetle, with spraying done spring, summer and fall.

Employee Training

Though his training is in other fields, whatever he does Collins is "thinking public relations" — better yet, human relations. The obvious result is a generally more pleasant working atmosphere, a staff that takes pride in its work, and one that gives maximum effort.

Collins' training program is therefore multi-functional: to broaden knowledge and skills; increase employee confidence; afford opportunity to advance in salary and responsibility; and create an attitude

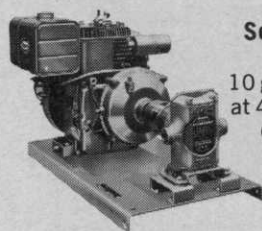
Below are Chicago employees Elba Page, left, tree trimmer and landscaper, and Ralph Arthur, motor truck driver.



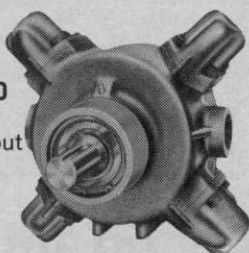
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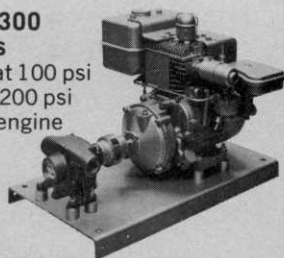


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that will build a good image for the department.

It's not uncommon, he said, that "the training my men get leads to a better paying job somewhere else."

How does the public relations angle in training come about? "If someone stops my man and asks what he's spraying, I want him to know, rather than shrug his shoulders. If he says it's DSMA and is then asked 'what's that?', I want him to know. And I want him to know why he is doing what he is."

Regular employee meetings are devoted to problems, plans, and additional classroom-type instruction. Sometimes, exams are given. Examples of questions asked are in Table I.

Responsibility is delegated to two supervisors, Harry Clifford and Lee Hightower, and four foremen — Jesse Hightower, Tom Anglin, L. C. Douch and Earl Perkins. Job classifications include laborer, semi-skilled, truck driver, mechanic, and three grades of operators.

Collins has plans well in mind for reclaiming more brush land and beautifying existing grounds as Houston Intercontinental Airport grows to accommodate a passenger volume of 8 million by 1975 and 13 million by 1980. And Ray Humbard, though he hasn't the time to verify that planes arrive and depart every 48 seconds at O'Hare, probably is ever pondering what landscaping he must tear up next.

TABLE I — Typical Examination Questions

For truck drivers:

1. What is known as hydraulic over air?
2. Give the present tire size of the Dodge dump truck?
3. What is the water capacity of the Ford water truck?
4. Describe booster brakes.
5. How do you put the Dodge power wagon in four-wheel drive?
6. How many yards of wet sand will the Dodge dump truck hold?
7. Does the Cony wagon have a six- or 12-volt system?
8. What water pressure can be produced from the Ford water truck?
9. Why do you downshift a truck in motion?
10. What license is required by state to drive a vehicle with passengers?

For Mechanics:

1. How does the Simplex grinder work?
2. Do you understand and know how to lap the reel after it's sharpened?
3. What does the bale lift do on the Toro mower?
4. What is a bedknife?
5. How many cutting blades are on the present reel of the Toro mower?
6. Name the two most important systems on the entire Toro Spartan mower.
7. How many hydraulic knobs operate the up and down positions of the reel mowers?
8. How many cylinders does the motor on the Toro tractor have?
9. What kind of brake system does the Toro tractor have?
10. What is the ratio wheel to reel?

For Operators — Grades one, two and three:

1. In what position of the PTO speed shift lever do you engage the 1,000 rpm shaft and the 540 rpm shaft on the Ford 5000?
2. How long is the hose on the Thuron ag sprayer?
3. Can you operate the backhoe?
4. How many cubic yards does the hopper hold on the Rogers sweeper?
5. When using the Astron mower, what two gears are best for mowing?
6. What is Mr. Collins' telephone number?
7. Who is the airport manager? The Director of Aviation?
8. Name some of the fertilizers we use.
9. What is the total acreage we maintain?
10. Do you always read the Tech Book on the tractor or piece of equipment you are operating? (If your answer is No, you better begin after today.)

For Foremen:

1. State the difference between mulch and soil additive?
2. What is the chemical difference by application and results of a selective herbicide from a soil sterilant?
3. List the rate per acre of fertilizer applied in March, May and July.
4. What is a balanced fertilizer?
5. What is the difference between seeding, sprigging and sodding?
6. Why do we test soil?
7. What is a surfactant and what is it used for?
8. What kind of fertilizer is used to promote fast growth? To promote root growth?
9. What is DSMA? 328?
10. How many vehicles can you operate yourself and teach others to operate them?